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ARTICLE I.

MENTAL PHILOSOPHY—ITS CONNECTION WITH MEDICINE.

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The celebrated Dr. Rush, in enumerating the causes that retarded the progress of medicine, adduces as one of the principal, the neglect of cultivating those branches of science which are most intimately connected with medicine. These are, says he, chiefly "natural history and metaphysics." The former term he used in its widest sense, comprising both the animal and vegetable kingdom; but by the term metaphysics, he intended to include only that field of inquiry which relates to a knowledge of the operations and faculties of the human mind.

Though the above remark of Dr. Rush was made nearly a half century since, yet it may apply, if we mistake not, with equal force and propriety to the present state of medical science. While every other branch of knowledge connected with medicine has been rapidly progressing, that styled here metaphysics, has, to a very great extent, been treated with entire neglect by a large majority of this profession. Perhaps it may be safely stated, that in no other department of human improvement has there been a greater advancement for the last fifty years, than in that of medicine. Every year has witnessed some important developement of new truths, as well as a more safe and correct application of those already discovered. Anatomy, physiology, and surgery, have each within this period been enriched by many splendid discoveries and improvements. Pathology, which then was scarcely known or recognised as a distinct branch of medical study, has since received great attention, and has shed a vast amount of light upon the causes, symptoms, and treatment

of disease. The departments of materia medica and therapeutics have also been greatly improved by many new discoveries in chemistry and pharmacy. Add to these the experience and observations of many able and skilful physicians, and we have medicine in its present highly cultivated and improved state. But the same cause which Dr. Rush mentions as retarding the progress of this noble science, still exists. While every other branch of medical knowledge has been constantly advancing, a knowledge of *mind*, as far as medicine is concerned, has remained almost stationary for centuries. Dr. Southwood Smith very correctly observes, that "the degree in which the science of mind is neglected in our age and country—and may it not be justly added, in our profession—is truly deplorable." There must be some cause or reason for this state of things, and the writer proposes in the present essay to inquire—

I. *Why* the cultivation of metaphysics is so generally neglected by medical men; and

II. To point out the intimate connection of mental philosophy with medicine; and

III. To offer some remarks upon the importance of a knowledge of this science to the physician.

In the first place, it cannot be adduced as a reason why mental science is no more successfully cultivated, that not sufficient talent, learning, and research, have been devoted to the subject. Some of the best minds that the world ever produced have laboured most assiduously in this field of study, and their productions bear the stamp of unwearied industry and profound attainments. Again: this neglect cannot be accounted for by any reasons deduced from the nature and unimportance of the subject. All writers on the philosophy of mind have borne their united testimony that a knowledge of the principles and applications of this science is of the highest possible importance. But the great and most efficient cause of this neglect, as we apprehend, remains to be stated—it is the *erroneous mode of investigation* that has been hitherto employed; the leading defects of which may be summed up under the following heads.

1st, The cultivators of metaphysics have omitted in their investigations almost entirely the intimate and necessary connection that exists between the mind and the body. In all their researches, they have viewed the mind as an *abstract essence*—as existing, and performing all its operations, independent of any material instrument or influences. They have treated not only with neglect, but with disrespect, that great law established by an all-wise Creator—viz. that *mind, in this world, should be dependent on physical organisation for its manifestations.* This law constitutes the only true foundation upon

which any correct system of mental philosophy can possibly be based; and the consequence of overlooking this condition, has had the most disastrous effects on the cultivation of metaphysics. The very term itself has become a by-word, and those who are devoted to its pursuits, are not unfrequently made the subject of remark and ridicule. To call a man (observes a popular writer) a metaphysician, at the present day, is a delicate mode of recommending him to a lunatic asylum; and Dr. Armstrong, the well known writer on medicine, has wittily defined metaphysics to be "the art of talking grave nonsense upon subjects beyond the reach of the human understanding." And Dr. Bartlett, one of our countrymen, very justly remarks, that "almost the whole history of metaphysics is a record of absurdities, inconsistencies, and contradictions. The very name has become, almost by common consent, only another name for intellectual harlequinism and jugglery. Never has the human mind been guilty of playing more fantastic tricks, than when attempting, by misdirected and impotent efforts, to unriddle the mystery of its own constitution."

2dly, Writers on this subject have not only based their systems of philosophy on *reflection* and *consciousness* in general, but they have erected their own individual consciousness into a universal standard. Says Dugald Stewart, in his philosophical essays, "all our knowledge of the *human mind* rests ultimately on facts for which we have the evidence of consciousness. And accordingly, in my inquiries, I have aimed at nothing more than to ascertain the laws of our constitution, *as far as they can be discovered by attention to the subjects of our consciousness.*" This remark of Stewart will apply to nearly all the writers of the metaphysical school. But instead of consciousness being a true guide in mental investigations, it is decidedly unsafe and erroneous. In the first place, consciousness affords no positive evidence of the existence and functions of the cerebral organs, by means of which alone the mind acts in this life. It simply takes cognisance of mental operations in general, and throws comparatively but little light on the nature or number of the distinct faculties of the mind. Again: it is impossible to base evidence on this source alone, without one individual's considering *his own* consciousness as a standard for *all others*. This constitutes one of the most radical errors of the metaphysicians. They have taken their own minds as a standard, or type, for the whole human race; and, accordingly, each has began to erect a system or theory of his own, by demolishing that of his predecessor. Now, the consciousness of no two individuals in the world are alike, any more than the features of their bodies; and it is utterly erroneous, as well as absurd, to consider such a guide or rule as susceptible of universal application. The great variety of

systems, theories, and speculations in mental philosophy have arisen, in no small degree, from this source. Hence, too, the great diversity of opinions, as well as contradictions in conclusions, on the part of its cultivators. This very fact affords *prima facie* evidence that their premises were false; and, consequently, that their systems were not founded in nature, whose laws, when correctly interpreted, are always harmonious and every where the same. (Truth, like its author, is ever consistent with itself.)

3dly, Another radical defect in past methods of investigating mental phenomena, consists in an almost entire reversal of the true mode of studying nature. *Observation* and *experiment* are the only sources by means of which we can derive any positive evidence for the establishment of principles in science. Facts must first be observed, and properly classified; and when a sufficient number have been collected, or none of a contradictory nature can be found, general principles may safely be deduced from these, and be considered as permanently established. But instead of pursuing this slow and tedious process, as marked out by the immortal founder of the inductive philosophy, metaphysicians have first commenced by forming visionary hypotheses and assuming certain premises, and afterwards have attempted to reconcile facts with these. They have retired to their cloisters and speculated by the light of their own consciousness, when they should have studied by observation and experiment the great book of nature. They have capriciously allotted faculties to man, and arbitrarily dictated laws to nature; and the consequence is, there has been but little of truth mingled in their researches. Some have denied to the mind all *innateness* of disposition or character, and have maintained that it was precisely like a piece of white paper, capable only of being acted upon, and moulded by, outward impressions. Others have assumed that all minds were by nature *alike* as to capacity, and that the great diversity in the talents of different men, was solely occasioned by external circumstances. (In fact, no two leading metaphysical writers can be found who agree as to the nature or number of the faculties of the human mind.)

4thly, Another serious defect in past investigations on this subject, is a complete failure to account for many mental phenomena. It is to be presumed of every true science, that it will afford some rational explanation of the principal causes and relations of the various phenomena of which it treats. But it is far otherwise with the one under discussion. Many facts in this science, as far as the labours of metaphysicians are concerned, now for more than two thousand years, remain to this day entirely inexplicable. They afford no rational explanation whatever of the following topics: *nature of genius;*

causes of diversity in talent and moral feeling among different individuals; effects on the mind of opium, and other intoxicating substances taken into the stomach; difference between the sexes; the process of gradual developement of the mental faculties; the causes of idiocy; the phenomena of dreaming, somnambulism, insanity, monomania, &c. Moreover, the philosophy of the *will*, the laws of *free agency*, and the different degrees of *human responsibility*, have never yet been satisfactorily expounded by any system of metaphysics. Other instances of failure might be adduced; but certainly the facts and phenomena already mentioned, among the most important in life, should be clearly and rationally accounted for by a system of mental philosophy. Again: it is fair to infer that a science which should give a correct exposition of the faculties of the mind, and the laws which govern their developement, would be fraught with the highest practical benefit to mankind. But how directly the reverse of this are all the labours of metaphysicians, when examined by such a test. Their researches have been altogether too speculative and ethereal to be reduced to any practical purposes. The subject itself has not only fallen into general disrepute, but, as a branch of study, receives scarce any attention, at the present day, in our seminaries and institutions of learning. In view of these facts, it is not surprising that the study of mental philosophy should have been neglected by medical men. Its principles, as hitherto taught, have had too little to do with physical organisation, in order to come under their cognisance. But when the true mode of investigating the subject is correctly understood and admitted, it must devolve on the members of this profession to *take the lead* in its cultivation; and they can then no longer continue to neglect it without violating the most sacred duties which they owe to medicine, as well as sacrificing the best interests of the public. This brings us to a consideration of our second general head.

II. *The connection of Mental Science with Medicine.*—Before entering directly upon an examination of this question, it will be necessary to decide, or settle in some measure, what are the *true* principles of mental science. It will be seen, from the preceding observations, that we cannot rely upon the mode of investigation adopted by metaphysicians, neither can we obtain from this source a correct knowledge of the philosophy of the human mind. This fact must be admitted, we think, by all candid and competent judges. What, then, is the true foundation of mental science? What are its principles, and the nature and amount of evidence in support of them?

First, then, we have no positive knowledge whatever of mind as an abstract essence or entity. Though we believe it to be of an immaterial and spiritual nature, destined to immortality, yet God has never

endowed us with faculties capable of comprehending or taking cognisance of any such existence. It is therefore useless to indulge in any speculations about its *nature* or *essence*, and folly to predicate a system of mental philosophy upon such a basis. All we can possibly know of mind, as manifested in this world, is through its material instrument. That the brain is the organ of the mind, has been the united testimony of the best writers on anatomy for centuries, and is, moreover, confirmed by the opinions of the highest living authorities on the subject. Here, then, is the first principle—the foundation of mental science. In the second place, the brain is composed of a congeries of organs, corresponding in number to the faculties of the mind. This is proved by analogy, observation, and experiment. The brain, as its anatomy shows on dissection, is a complex viscus or body, and is made up of distinct parts or organs. Now, according to a law pervading all organic matter, where distinct organs are found, however similar in structure, or nearly connected in their relations, they perform entirely different functions. The brain cannot be an exception to this universal law. Again: the mind consists of a plurality of faculties, and, in accordance with the counterpart of the law just stated, it must necessarily have a plurality of instruments. And both observation, as well as experiment, prove that these instruments are distinct organs in the brain. Thousands, who have made accurate and extensive observations, and whose testimony cannot be called in question, agree on this point. They have, moreover, collected such an amount of facts in confirmation of it, as to afford positive and irresistible evidence of its truth to every unprejudiced and well-disciplined mind. It has also been found, by actual experiment in a multitude of instances, that whenever particular parts or organs of the brain suffered serious injury, the corresponding faculties of the mind have invariably been more or less impaired in their manifestations. No person can candidly and thoroughly investigate this proposition, without being absolutely compelled to admit its truth.

The third great principle in this science may be thus stated—the size of the organ, other things being equal, is a measure of the power of its corresponding faculty. This law is also one of general application. The conditions involved in the phrase, "other things being equal," will of course vary in character under different circumstances; but when properly considered, size is strictly a measure of power, and there cannot be found an exception to this law throughout the universe. It is unnecessary here to accumulate facts either for the purpose of illustrating or proving this principle.

Our next inquiry is, can we ascertain accurately the size of these several organs in the living head? And, secondly, can we, by making

proper allowance for the influence of these other conditions on size, judge correctly of the strength of the different faculties of the mind? These questions must be settled by matters of fact and actual experiment. They afford no chance for speculation or sophistry, and none but those who have carefully examined the subject, are qualified to give testimony in the decision. First, then, can the size of the brain and its various parts be ascertained? Says Magendie, "the only way of estimating the volume of the brain in a living person, is to measure the dimensions of the skull." Sir Charles Bell also observes, that "the bones of the head are moulded to the brain, and the peculiar shapes of the bones of the head are determined by the original peculiarity in the shape of the brain." Blumenbach, Cuvier, Monro, and other distinguished anatomists, have expressed similar sentiments. Thus by various measurements of the skull, then, externally, we can ascertain the size of the different organs of the brain. It is true there may be certain exceptions to this principle, as in the case of disease or old age, but these by no means invalidate its truth, or the practicability of its application. Some difficulty may also occasionally be experienced from the extreme thickness or irregularity of certain parts of the cranium, but the precise nature or amount of this difficulty can generally be understood—proper allowance can be made for it, and very correct inferences drawn as to cerebral developement.

Being able, then, to ascertain the size of the several organs of the brain, can we judge correctly of those conditions which influence or modify its functions? These are chiefly, constitution, temperament, health, and education, a knowledge of which may certainly be ascertained, both from the appearance and organisation of an individual, as well as from his own statements concerning his history and circumstances. This remark is not mere assertion—it is supported by a multitude of facts, and did the occasion require, we might furnish an amount of evidence in confirmation of its truth that could be neither disputed nor denied; but, for the present, must content ourselves by referring the reader to such works as treat particularly of those points. It may be asked, if we consider the above propositions sufficiently proved and established to be regarded as settled principles in mental science? We reply in the affirmative. This question is not to be decided by our individual knowledge on the subject, nor by the ignorance of the community generally. All the great principles in physical science have been discovered, proved, and established by a few original minds; and the truth of such discoveries are always to be admitted, not by the extent to which they have been propagated, nor by the mere number who publicly advocate them, but from the positive evidence furnished by their original discoverers and expounders.

It is thus we judge in relation to the truths of chemistry, geology, and natural philosophy; and it is unfair, as well as unjust, not to apply the same rule to mental science. For its principles are based on precisely the same kind of evidence, appealing directly to the senses, observation, and experiment; and we venture to hazard the opinion that its leading professors are as competent judges in this matter, as the teachers of any other great department of science. Did space permit, we might adduce many incontrovertible facts and arguments in proof of a system of mental philosophy based on these principles—we might show how beautifully and perfectly it accounts for all mental phenomena, and how vastly superior it is, in practical utility, to all other systems; but our more immediate object is to point out its connection with the distinct departments of medicine.

Anatomy.—The dissection of the brain has been hitherto conducted on strictly mechanical principles, and that, too, in violation of a fundamental law in anatomy. It is a rule, laid down and invariably adopted by the best anatomists, that all parts or organs of the body should be dissected in harmony with their functions. And, in accordance with this rule, whenever an organ of a very complicated structure is to be dissected, its various parts and relations should be exposed in the best possible manner, to display the offices which it performs in the animal economy. It is only by pursuing this course, that we can ever arrive at a correct knowledge of the structure of any organic substance. But the brain—the most important viscus in the human body—has been, and is still, dissected by a majority of anatomists without the least reference whatever to its functions. They proceed to cut it up into slices, like a ham or a cabbage-head, beginning the work of destruction upon its upper surface and proceeding downward, cut directly across its tissues just as chance or accident may happen to direct; whereas they should commence the dissection at the base of the brain—where all the nerves and commissures centre—unfold their several structures in regular order, and trace out their distinct relations with a particular reference to their functions. As a consequence of this mechanical course of dissection, the various parts of the brain have been designated by names entirely inappropriate and unphilosophical. We cannot refrain from quoting some remarks on this point by Dr. Conolly, formerly Professor of Medicine in the London University, which appeared in the ninety-fourth number of the Edinburgh Review. Says Dr. C.—"Up to this day, our memory is pained by the recollection of the barbarous names and regular sections of what was then the dullest part of anatomical study, which, although often repeated, left no trace but of its obscurity or absurdity. Here, an oval space of a white colour, and there a line of gray, or

curve of red, were displayed; here a cineritious, there a medullary, mass; here a portion white without and gray within, there a portion white within and gray without; here a gland patuitary, and there a gland like grains of sand; here a ventricle, there a cul-de-sac, with endless fibres, and lines, and globules, and simple marks, with appellations no less fanciful than devoid of meaning." We regret to acknowledge that this is a true description of the manner in which the anatomy of the brain is studied, even at the present day, in most of our medical institutions. It is, emphatically, "the dullest part of anatomical study," and must certainly continue so, until its structure as a whole, and the relations of its several parts, are examined with a special reference to the important functions which they perform. When this is done, the study of the brain will become the most interesting department of anatomy, and it will then be found that mental philosophy sustains, in this respect, a very intimate and necessary connection with medicine.

Physiology.—This term literally signifies the *doctrine of nature;* but in its more general and popular acceptation, it is that science whose object is to investigate the functions of all organic existences, including both those of the animal as well as the vegetable kingdom. It is, however, as a branch of study, chiefly confined to the organs of the human body. These have now been made the subjects of special study for centuries, and there remains only two or three organs whose uses are not generally understood. Of these, the brain is the only organ of any consequence. From its texture, position, and anatomical relations, in might be inferred, *a priori*, that this viscus performed very important functions in the animal economy. This inference is rendered still more probable from the great amount of blood it receives—being nearly one seventh part of the whole circulation. But, notwithstanding this presumptive evidence as to the importance of the functions of the brain, and the various means that had been employed for ascertaining them, they remained enveloped in profound mystery till near the close of the last century. Dr. Gall—whose name, however much it may be derided at the present day, posterity will place beside those of Galileo, Harvey, and Newton—has the honour of discovering the true functions of the brain. This he effected by observation, which is the only safe and correct guide in such inquiries. Some anatomists have pretended that the *structure* of an organ revealed its *functions;* but this position is false and untenable. For instance, no anatomist, by dissecting the optic nerve, could predicate that its function is to minister to vision; nor by dissecting the tongue, could discover that it is the organ of taste. There is not a single organ in the human body, whose offices have

been disclosed by mere dissection. Again: this knowledge cannot be obtained by means of experiments on living animals, or by pathological researches. These methods have been more especially adopted by the French, who, by their varied and multiplied experiments, have made many valuable contributions to the science of physiology. But a knowledge of the uses of such an intricate and complex viscus as the brain could never first be ascertained by any such modes of investigation, though they might throw much light on various points after its primary functions had once been discovered by observation. Did our limits permit, we might give the most satisfactory and conclusive reasons in proof of this statement, but can merely remark that it perfectly accords with the whole history of such inquiries in physiology and pathology.

It is now admitted, by all who have carefully examined the subject, (and no others are competent judges in the case,) that the functions of the brain partake of a three-fold nature—viz. *motion*, *sensation*, *and mental operations*. The powers of motion and sensation depend principally upon the central and basilar portions of the brain, which are more immediately connected with the spinal cord. This part of physiology is very imperfectly understood, and much, doubtless, remains yet to be discovered. The mental powers depend for their manifestations on the cerebral organs composing the middle, posterior, and anterior lobes of the brain. These powers, when examined and classified according to their manifestations, are divided into the *affective* and *intellectual* faculties. These are again subdivided into the *animal feelings*, *selfish propensities*, *moral sentiments*, and *perceptive* and *reflective intellect*. We have thus a cerebral organ for every distinct faculty of the mind, and consequently as many organs as faculties. If such, then, are the functions of the brain, mental philosophy sustains a most important relation to medicine.

Surgery.—All injuries or diseases involving the brain, and requiring surgical aid, have universally excited great interest. A majority of the operations for such injuries have always been regarded as among the most difficult in surgery, as well as dangerous and uncertain in result. The cause of this arises from two sources:—first, the importance of the brain, as being the seat of life; and, secondly, from our imperfect knowledge of its functions. It is impossible to treat a disease, or operate for an injury, with any certainty of success, without correctly understanding the difficulties involved. The two principal means of obtaining this information are—first, *change in organic structure*; and, secondly, *functional derangement*. Now, as many injuries happen to the head which neither lacerate the integuments, nor in

any visible manner affect the skull, and as the brain itself cannot be examined, the surgeon must found his diagnosis chiefly upon those symptoms which grow out of functional derangement. But where the true functions of an organ are not understood, how can he judge accurately of the *kind* or *degree* of derangement that may exist? The whole history of surgery shows that many operations for injuries and diseases of the head, have been a matter of mere *experiment*, guided, perhaps, by some experience, but not by any well established principles. The consequence is, there has been less advancement in this department of surgery than in any other. It is true, there has been a great improvement in the treatment of those affections connected with the external senses, though none, comparatively, in cases where the brain was concerned. But when the offices of this organ are clearly and fully understood, we anticipate the most important improvement in this department of surgery. Our limits will permit us to notice only a few of the advantages to be derived from this source.

1st, It will enable the surgeon to judge more accurately of the precise character of an injury or disease of the head. It is now admitted, by the best physiologists and pathologists, that the peripheral part of the brain is the seat of mental operations, while the more central portions are connected with the powers of sensation and motion. Therefore, whenever the faculties of the mind are deranged or impaired in their manifestation, it is certain that the exterior parts of the brain are affected; but when we have convulsions, paralysis, &c. of the body, it is equally certain that the more central portions are involved. To such an extent may this mode of diagnosis be perfected by future discoveries, that, from a long and critical examination of mental manifestations, the surgeon can determine the precise convolution injured; also, by carefully observing the *kind* of convulsion or paralysis, he may be able to decide what particular ganglion or commissure of the brain is affected.

2dly, There are sometimes extravasations of blood between the skull and dura mater, or within the membranes enclosing the brain, and it becomes necessary to trepan the skull for its removal. The chief difficulty that surgeons have hitherto encountered in such operations, was to ascertain its exact location. Now, by a thorough knowledge of the faculties of the mind, both in a healthy and deranged state, the surgeon will be able to select the precise seat of this effusion.

3dly, It is well known that the state of the mind has a most powerful influence over the body, especially when in a morbid or diseased condition. In no instance is this reciprocal influence more powerful,

either for good or ill, than in severe and unexpected injuries; and under no circumstances whatever can it be brought to bear more efficiently than in surgical operations, which are attended with great difficulty and danger. There are undoubtedly many cases where the success of an operation, as well as the life of the patient, depends almost entirely on the state of mind or feelings at the time and afterwards. Now, a system of mental philosophy, based upon the functions of the brain, will afford the most essential aid in such cases. It will enable the surgeon to detect at once the strong and weak faculties of his patient, and thus assist in presenting such motives, and making just such appeals, as will operate most beneficially on his feelings and spirits. Says Dr. Rush, speaking in relation to medicine in general, "the advantage to be derived from this source (*i. e.* a knowledge of mind) might be a hundred times greater, were they properly directed by well-educated physicians."

Pathology.—This is comparatively a new light in medical science, as but little attention was given to the subject till within a few years. Its object is to investigate the changes which have taken place in the functional derangement or structure of an organic body, either as the cause or effects of disease. This mode of investigation has been prosecuted with great zeal, talent, and industry, by many of the most distinguished men in the profession, and it is to this source, more than to any other, that we are recently indebted for some of the most valuable discoveries and improvements in medicine. Among other inquiries, the morbid conditions of the brain have by no means escaped the notice of pathologists. At the same time, we venture to affirm that there is not another organ in the human system which has received an equal amount of attention as to its pathology, but what has been attended with more definite and satisfactory results. The cause of this arises from three sources:—viz. first, from the extreme delicate texture of the brain; secondly, from the very complicated structure and intimate relations of its several parts; and, thirdly, from our imperfect knowledge of its functions. The last, as we apprehend, is by far the most fruitful source of difficulty in itself, besides being, to a considerable extent, the occasion of the two former.

Pathology, as a science, is based on physiology. For an examination into the causes and effects of disease, whether it be functional derangement or change in organisation, presupposes necessarily a knowledge of the healthy state and functions of an organ. Otherwise, we could not judge accurately of the deviations from health, neither could we understand the changes which have been occasioned by disease. And never can pathological researches, as to the brain, be carried out and perfected, till the physiology of all its parts is thoroughly

comprehended. This knowledge is indispensable, in order to make proper observations, and to establish general principles in pathology. *First*, If we were perfectly acquainted with the functions of every distinct portion of the brain, we should then know precisely what parts to examine in case of disease, and would thus be far more likely to discover the morbid derangements in function, or the nice changes in structure, that may exist. *Secondly*, The various parts of the brain sustain very intimate and important relations to each other in the performance of their functions, including muscular motion, sensation, and mental operations. Now, these several relations and connections must first be understood in a *healthy* state, before we can clearly perceive the causes or effects of disease in all the parts of such a complicated viscus. *Thirdly*, The brain is subject to a great variety of affections where no indications or traces of change in organisation have ever yet been discovered by the best pathologists. Whether this difficulty arises most from the extreme delicacy of its texture, or the want of more perfect instruments for making the examination, it is unnecessary here to decide. But it frequently happens, as is rendered evident by external symptoms, that very great functional derangement actually exists, and, according to all analogy, there is every reason to believe that some change in physical structure must either have preceded, or been occasioned by this derangement. Now, a thorough knowledge of the functions of the brain, embracing the various kinds of motion and sensation, as well as mental manifestations, will not only incite, but enable us to recognise far more accurately the *kind* and *degree* of deviations in these, from a state of health. We may thus, by continuing this mode of inquiry and examination, be able to detect changes in organisation which have hitherto entirely escaped the closest scrutiny of pathologists. Hence we see that a knowledge of physiology must precede that of pathology, and that mental philosophy sustains, in this respect, also a most intimate and important relation to medicine.

Practice of Medicine.—Aside from good natural abilities, two things are indispensably requisite to constitute any individual a successful practitioner of medicine. *First*, He must be thoroughly and practically acquainted with the causes and symptoms of disease: and, *secondly*, with the nature and application of the most appropriate remedies. And the more complicated the disease and difficult its treatment, the more important that his knowledge should be accurate, extensive, and well grounded. This is emphatically true, in reference to nervous diseases. It is admitted in the Library of Practical Medicine—the most recent and popular work on the subject—that "the

diseases of the brain are, at the present moment, more obscure than any other great class in the nosology."

While there has been a constant improvement in the diagnosis and treatment of diseases affecting every other part of the human system, there has been comparatively but little advancement in respect to those of the brain. Dr. Stokes, in his valuable lectures on the Theory and Practice of Physic, has very correctly adduced the following circumstances as causes for such a state of things. "*First*, The great obscurity of the symptoms; *secondly*, The want of correspondence between symptoms and known organic changes; and, *thirdly*, The necessarily imperfect nature of our classification of nervous diseases." Let us briefly examine these points. Now symptoms, according to this same author, consist "in certain changes produced in functions." But we have already seen that large numbers in the medical profession are wholly unacquainted with the real *functions* of the brain, and therefore they cannot judge clearly and rationally of the *kind* or *degree* of functional derangement; and hence the great obscurity attending the symptoms of diseases of this organ. We have, moreover, seen that *mental operations* constitute one of the most important functions of the brain—that the exercise of every individual faculty of the mind depends on a distinct cerebral organ—but how little is definitely and practically known concerning the healthy or morbid manifestations of these faculties? The knowledge that is already possessed on the subject is altogether too vague, indefinite, and speculative, to be applied to any practical or useful purposes in medicine.

The fact is, the study of mental science, as based on the functions of the brain, must, and will, in the process of time, constitute one of the most important features in the diagnosis and treatment of the diseases of this organ. As to the "want of correspondence between the symptoms and known organic changes," this is easily explained. It is more apparent than real; for nature never contradicts herself. It originates chiefly from a false view or classification of symptoms, and this, consequently, from an imperfect knowledge of functions. There may be, we admit, more than usual difficulty in ascertaining and settling this correspondence in the pathology of the brain, but a certain connection must necessarily exist between its functional derangement, and change in physical structure, according to all the known laws which govern organic matter; and we have not the least doubt, but the precise kind and extent of this correspondence will yet be discovered and established.

The third difficulty in the way of understanding nervous diseases—viz. their imperfect classification—grows out of the two former, and

can be rectified only in proportion as the functions of the brain become clearly and fully understood. The classification of no science whatever can be correct or perfect, unless it is based on a true interpretation of all the facts and phenomena in nature appertaining to it. That the physician should be well acquainted with the most appropriate remedies in the practice of medicine, requires no argument to prove or enforce.

III. *The importance of a knowledge of mental science to the physician.*—This subject may be viewed under two general aspects:—*first*, as connected with the duties which he owes to his profession; and, *secondly*, in the relations which he sustains to the public. It will be seen from the preceding observations, that neither the anatomy, physiology, nor pathology of the brain, can be clearly and fully understood without a knowledge of its functions, or, in other words, of mental philosophy; moreover, that such knowledge is an indispensable requisition, in order to understand correctly the diseases of the brain, as well as to perform successfully many operations in surgery for injuries of the head. This knowledge is especially important, inasmuch as the principal and almost the only means we have of ascertaining the affections of this organ, is through the *kind* and *degree* of its functional derangement. We have no stethoscope to examine the state of the brain; neither can we form or correct our diagnosis by the physical signs of auscultation and percussion; neither is the brain, like most other parts of the body, susceptible of much pain from disease. Hence the great importance of understanding the functions of this organ, particularly of those portions connected with mental operations; for the morbid or deranged manifestation of these will constitute the surest and most unequivocal symptoms of disease. To speak of mental excitement or depression in general terms, is not sufficient. We must know what *particular* faculty is involved, and *how much* it is affected. We might by such a course of diagnosis anticipate the very first intimations of nervous diseases, and thus employ remedial agents to much more advantage. It is not at all improbable but that a better knowledge of the functions and diseases of the brain will enable us to apply certain articles in the materia medica with far greater efficacy and success; new medicines may in this way yet be discovered, or different combinations made of those already in use.

Again: A knowledge of mental philosophy cannot fail to be of great advantage to the physician in the treatment of disease. That the state of the mind has a powerful influence over the body, either for good or for ill, has been universally acknowledged. It was remarked by Dr. Rush, that "consumptions, fevers, convulsions, diseases of the stomach and bowels, visceral obstructions, apoplexy, palsy, madness, with a

numerous and melancholy train of mental diseases, are frequently brought on by the undue action of the passions upon the body." All must admit that the faculties of the mind operate as most powerful agents, either as causes or remedies of disease. A multitude of facts might be cited, where the exercise of certain mental faculties has proved entirely effectual in preventing or curing various affections. In this way, a salutary and healing influence has been exerted upon the body when all other medicinal agents have been found utterly useless. It is to this source that quackery and empiricism in medicine is chiefly indebted for success. It is by operating upon the *feelings* of patients, that quacks perform so many wonderful cures, and infuse such a magic charm into their patent drugs. How important, then, that the regular bred physician should be thoroughly familiar with the nature and application of an agency so efficient and powerful in the treatment of disease? But it is not enough to be acquainted with the powers or faculties of the mind, in a vague, abstract, and general manner—such as love, hope, joy, grief, fear, sorrow, anger, &c. &c. We must know what *particular* organ in the brain is called into exercise at the same time—what is the precise character and strength of its mental faculty, and what are the most appropriate motives to be addressed to it. We must understand the nature and operation of those great laws which every where invariably regulate mental manifestations, and be able also to explain every fact and phenomenon connected with individual minds. The physician, of all others, should be competent to do this to his patient, and a system of mental science, based on the functions of the brain, places within his power the means of obtaining such information. He would be able, in this way, to recognise at once the peculiar temperament or idiosyncrasy of every individual patient, and could thus take the advantage of a multitude of circumstances of which he would otherwise be wholly ignorant. It is by pursuing such a course, that a knowledge of mind can be rendered, in its applications, a "hundred fold greater," in the practice of the healing art, than the world has ever yet witnessed.

Again: The cultivation of mental philosophy is calculated to exert a most beneficial influence upon the progress of medicine. Our present limits will permit us to notice only a few of the advantages derived from this source.

1st, It will tend to do away with many groundless theories, hypotheses, and speculations, which, more than any thing else, have retarded the progress of this science. A large number of the works on medicine are comparatively worthless, because they are, in a great measure, filled with the mere rubbish of theory, controversy, and the opinions of men who cannot be considered as competent judges or

safe guides. These theories are partly of ancient, and partly of modern origin. The cultivation of medicine formerly partook very much of the manner and spirit in which metaphysics were studied—dealing in abstractions and generalities, without sufficient regard to facts, or the nature of the evidence upon which they were professedly based. The inductive philosophy, introduced by Lord Bacon, produced quite a revolution in the study of medicine, and pointed out the true mode in which every department of this science should be cultivated; and by means of which, most of its discoveries and improvements, for the last fifty years, have been effected. Now, a system of mental philosophy, based on the functions of the brain, is founded upon the most extensive induction of facts, and enforces at every step the absolute necessity of observation and experiment. It will, moreover, tend to bring into constant exercise the *observing faculties* of the medical student, and render him exceedingly cautious that his conclusions are always founded upon correct data. It will thus prevent too hasty generalisation in medicine, and eventually become a standard to test the truth or falsehood of every new doctrine which claims to be based upon the great laws of physical organisation.

2dly, Such a system of mental philosophy will enable us to test the real merits of the *opinions* of men, and decide how much weight should be given, in matters of science, to mere human authority. There are four classes of persons whose opinions in medicine should always be scrupulously examined, and on certain subjects they should be entirely set aside, no matter how extensive their experience or profound their attainments; the difficulty arises from the *peculiar constitution* of their minds. The first class may be characterised as possessing very strong observing faculties, with quite deficient reflective intellect; these may observe, collect, and understand facts to any amount, but can never perceive or comprehend the force of *principles*, because they are *naturally* deficient in the powers of analysis and ratiocination. This class are not, therefore, competent judges wherever *general principles* are concerned. The second class of persons possess minds of a directly opposite charac'er, having strong reflective faculties, but weak perceptive intellect; such individuals are not much given to observation themselves, neither can they appreciate the importance, or see the bearing, of *facts* in reasoning. They are inclined to dwell almost exclusively upon *general principles* and *abstract relations*, and not unfrequently become very speculative and visionary in their views. Consequently, their opinions on all *practical* subjects must be received with much caution. The third class may be described as possessing, naturally, such an inordinate degree of self-conceit and firmness, as to render them blindly obstinate, and

wilfully set in their own way. They are always self-opinionated, and unwilling to examine new subjects, or alter any views which have long been entertained; and when their minds are once made up, no force of argument, or amount of evidence, will induce them to change or modify their opinions, simply because they *will not* be convinced. In the fourth class we would include those who are considerably advanced in life, and whose habits and modes of thinking have become so fixed and settled, as to run almost necessarily in one circle or channel. Such is the nature and organisation of the brain, on which the exercise of every mental faculty depends, that it is very difficult, if not impossible, for persons past the age of fifty to canvass properly and rationally the merits of new discoveries and improvements. We yield to none in our respect for age, as well as our confidence in the judgment of those of long and successful experience; yet we do say, that the opinions of men passed the middle age of life, should have comparatively but little weight in settling the claims of new discoveries and improvements. We verily believe that not only medicine, but that the progress of civilisation, as well as of the arts and sciences generally, have been seriously retarded by giving an undue importance to the mere authority or opinions of such men.

3dly, The study of mental philosophy will eventually rectify or counteract the injurious effects of *nosology* on medicine. It has been a most unfortunate thing for this science, that its cultivators should ever have laid so much stress upon the mere nomenclature and verbal descriptions of diseases. In the first place, in order for such a course to be correct, it presupposes that the nature, causes, and symptoms of disease are already clearly and fully understood; and in the second place, that no change can be effected in these, either by time, climate, or other circumstances; and, lastly, that all individuals will look at these facts through the same medium, and arrive at precisely the same results; either of which conditions is absolutely impossible as well as absurd. Now, a nosological classification of disease, based on premises so false and erroneous, could not fail to have a most disastrous effect on medicine, and such has actually been the case. It has always operated as a great barrier to any change or improvement; it has filled volumes on medicine with words comparatively destitute of ideas; it has cultivated the memory and fostered the credulity of the student at the expense of his judgment and independence, and led him as a physician to prescribe for the *names*, rather than the symptoms of disease. Now, a system of mental science, whose invariable motto is, "*res non verba quæso*," will lead to a more correct use and interpretation of language. It will teach us that words are the mere exponents of ideas, and should never be employed without clearly

expressing some idea or stating some fact. It will show the absurdity of attaching fixed names and stereotyped descriptions to phenomena, the features of which are constantly changing, and so blend with each other that no distinct lines of demarcation can possibly be drawn between them. It will constrain the student to observe and think for himself, and not rely so much on the opinions of others; it will compel him to study the great book of nature, rather than the productions of men. The immortal Hunter used to exclaim to his class, while pointing at the human body, "I never read—this is the book that I study; and it is the work which you must study, if you ever wish to become eminent in your profession."

That a knowledge of mental science is important to the physician in his relations to the public, may be rendered obvious by numerous other considerations, aside from its bearings directly on his professional duties. We have already seen that such knowledge is not only necessary, but absolutely indispensable, in order to understand correctly many diseases to which the human body is subject; moreover, that it is of the highest importance in the treatment of disease that the physician should be thoroughly acquainted with the faculties of the mind, and the laws which regulate their developement, as connected with the brain. Now, as the lives and the health of the community—objects, the dearest and most sacred to every human being—are frequently entrusted to the care of the physician, not only the dictates of philanthropy, but the claims of justice, require that he should make himself fully acquainted with all the remedial helps and agents in his power, which are calculated either to restore health or prolong life. It is also a duty which he owes to his individual patients, and the public generally, to employ his medical knowledge and exert his personal influence to *prevent*, as well as cure disease. But in order to do this succesfully, the community must be made far better acquainted with the laws of the animal economy, and the means of preserving health, than they now are. Formerly, it was supposed that man had but little control over the causes of pain, disease, and death; some considered these afflictions as the mere results of chance or accident, while others viewed them as the visitations of a "mysterious Providence," and all apparently thought little, and practically cared less, about informing themselves on the subject. Now, it is found that disease and premature death are the penalties of violated laws—laws which it is the duty as well as the interest of *all* to study and obey. There can be no possible doubt but that disease in a multitude of instances might be prevented—that a vast amount of health might be saved, and the lives of many individuals be very much prolonged, by a more general diffusion, among all classes, of a knowledge of phy-

siology and hygiene. But before mankind will ever pay that attention to the laws of the animal economy which their nature and importance absolutely demand, they must see and realise *the entire dependence of all mental manifestations upon physical organisation.* The omission of this fact, whether it has been through ignorance or neglect, is one of the principal causes why these laws have hitherto been so little appreciated or applied, both by the learned and the unlearned. Now, a system of mental science, based on the functions of the brain, is calculated more than any thing else to impress upon individuals, and the public generally, the importance of attending to those subjects which will vastly augment human happiness, by the prevention of disease and the promotion of health. And just in proportion as the principles of this science become understood, in the same proportion will individuals be induced to study the nature of their own constitutions, and yield obedience to the laws which govern them. For it will be found, by taking this view of the subject, that all possess within their own power the means of self-preservation and improvement, to a far greater extent than what has ever been considered in past ages, or is even now conceived of by the great mass of the public. When we come to consider that *all the manifestations of the mind depend on the brain,* it becomes an inquiry of the highest moment to know what are the causes or instruments operating to affect its developement, and what may be the degree of influence which we can personally exert over these agencies. It will then be made to appear how powerfully the character of every human being is affected by physical organisation—that the degree of his adaptation to the enjoyment of the social and domestic relations, his desire and capacity of elevation as a moral and religious being, and also the amount of his intellectual ability, depend in a great measure on the brain; then, and not till then, will the attention of the public be suitably waked up to the importance of this subject. And of all others, it is the peculiar province, and may we not add the imperative duty, of the physician to be foremost in imparting this knowledge, and to take the lead in effecting a result so desirable and philanthropic.

But these principles have a wider range, and embrace far higher objects, than mere physical health or individual enjoyment. They have an important bearing on every thing which affects the interests of the human mind in this world, as well as its preparation for an endless state of existence beyond the grave. We can here allude to only a few other topics connected with this science: it would require volumes to unfold all its numerous and varied applications. It should be remembered that these principles, though they had their origin with the creation of man, have but recently been brought to light, and

made evident to the human intellect; and notwithstanding they are considered as fully proved and established as the facts of chemistry or geology, by all who have thoroughly and impartially examined them, yet the extent to which their truth is admitted, or that an application of them has actually been made, is very limited. A great work, therefore, remains yet to be done, and no small share of the labour belongs appropriately and necessarily to members of the medical profession. For the studies and pursuits of no other profession, or class of persons, are so nearly and intimately connected with mental science; this fact must be obvious from the exposition which we have already given of its principles. But aside from the superior advantages which the physician enjoys of studying the physiology of the brain, and understanding the various conditions that influence or modify its functions, the peculiar duties of his profession places him in the most favourable circumstances possible for acquiring a knowledge of human nature. In the language of Dr. Spurzheim, "No one has such opportunities of observing men at all times, and in all situations. He alone is present during the night and the day, to witness the most intimate concerns, and the most secret events of domestic life. Good and bad men, when sick, with difficulty conceal from him their true sentiments. To such a man, as knowing all that belongs to our nature, we unfold the most secret thoughts, and we acknowledge our frailties and our errors, in order that he may judge truly concerning our situations. There is, consequently, no man more called upon, no man more necessitated to study mankind, than the physician." Says Dr. Rush, "it is the *duty* of physicians to assert their prerogative, and to rescue mental science from the usurpations of schoolmen and divines."

But it is when we consider the great variety and extent of the applications of this science, that its cultivation becomes so important, and urges its claims on our attention in a manner superior to all other sciences or subjects of human research. It points out the only true mode of education (physical, intellectual, and moral) that deserves the name. It has already shed a vast deal of light on the nature and treatment of insanity, thus bringing "joy and gladness" to multitudes whose situation for ages has been considered hopeless and irremediable. It is destined also to reform and perfect our present systems of medical jurisprudence, criminal legislation, and political economy, as well as our social, civil, and religious institutions. It lays the only foundation for a system of ethics and morals—being the true exposition of the faculties and laws of the human mind. It is the "handmaid of religion"—the "elder revelation of God," and will eventually become "THE *philosophy* which the world for centuries had had only in expectation."

ARTICLE II.

CHANGES IN THE FORM OF THE HEAD, WITH CORRESPONDING CHANGES IN CHARACTER.

(Being the substance of Mr. Deville's statements before the meeting of the British Phrenological Association, at Glasgow, as reported in the 66th number of the Edinburgh Phrenological Journal.)

Mr. Deville read an account of a number of cases in which a change had been produced in the form of the head by education and moral training; in illustration of which, he exhibited the principal casts referred to in his paper. He set out by explaining that, although his facts were of a very striking kind, he did not wish to be understood as affirming that dispositions could in all cases be remodeled, or new talents conferred. The brain and its parts have their limits of power; and endeavours to make them work beyond their strength must weaken the functions, and may even, if pushed too far, lead to imbecility and structural derangement. By judicious management, however, beneficial changes can seldom fail to be produced In educating children, parents and teachers often err in assuming their own minds as a type of that of the species; so that, in the end, much toil is often found to have been thrown away. Phrenology is useful here, and also in enabling parents to see the propriety of not overworking the cerebral organs of their children. In the head of a young gentleman, eight years old, brought to Mr. Deville fifteen years ago for examination, he found a fine coronal region, with large Ideality, Constructiveness, Comparison, Causality, and Eventuality, fine perceptive organs, and an extraordinary large organ of Language; and the inference was, that with a little study he would be a fine linguist, and that he might cultivate with success the highest branches of literature. Mr. D. recommended repose from study for two, three, or four years, as otherwise mental weakness might be the result. The advice was neglected, and the youth is now little better than an idiot. Another case is that of G—— N——, a mentally calculating boy, who, at the age of six years, was engaged, through the introduction of a friend of Mr. Deville's, by the late Mr. P——, of Liverpool, to perform a series of calculations. Mr. D. suggested the propriety of not overworking the boy's organ of Number, but the hint was not taken. The consequence was, that although the boy, when he went to Liverpool, could give the square or cube of two, three, or more numbers, in a few minutes, and perform other kinds of complicated calculation, at present, as Mr. D. was informed by himself a few weeks ago, he cannot give the square or cube of numbers, and has not sufficient arithmetical ability even to

fit him for the place of a first-rate counting-house clerk. In his head, the organ of Number is now evidently smaller than in casts taken at four and six years of age. Innumerable instances of a like nature have fallen under Mr. Deville's observation. After detailing that of an idiot endowed with the talent for drawing, he proceeded to illustrate, by the following cases, the position that change of cerebral developement frequently follows change of training and pursuits.

1. Casts of the head of Mary Street were taken at twelve and fifteen years of age. From eight to twelve, she displayed alternately two phases of character. Her memory was very extraordinary with regard to the Scriptures and history. When only six years old, she followed popular preachers about the eastern parts of London, whose sermons she would afterwards repeat to the neighbours, and criticise; quoting Scripture, and illustrating her views in a most singular way. Thus she would go on, conducting herself morally, for six or eight months at a time; but then she would turn round, and for two or three weeks would pilfer, destroy, lie, and perpetrate all kinds of mischief; after which the activity of the propensities ceased. She was brought to Mr. Deville, who predicated from her head the opposite qualities in her disposition, which would render her, though generally under the influence of the moral sentiments, liable to display extraordinary freaks of the propensities, some of which he described. He counseled her parents to divert her attention in a kind manner from subjects calculated to over-excite the sentiments; and to keep out of view whatever tended to gratify the propensities. This course was followed: after the first cast was taken, she exhibited but one slight freak of the propensities; and at the time of taking the second, her whole conduct was highly moral. A comparison of the casts shows a great increase of the organs of the moral sentiments in the second. This improvement of the brain rendered abstinence from vice more easy than before; and the case teaches us, that the moral and intellectual organs are, like the limbs, fatigued and weakened by too much exertion.

2. Casts of the head of a young man were taken at seventeen and a quarter and nineteen years of age. From the commencement of his education, about the age of seven, till eleven and a half years old, he went on tolerably well; he then became sullen, indolent, discontented, selfish, and unsocial. He would take no trouble to relieve distress or avoid giving pain; but was not inclined to go out of his way to inflict it. Having left home in order to get his own living, he met with no success; upon which, following Mr. Deville's advice, he began to study intensely, and a great amelioration of his conduct ensued. To acquire knowledge, it appeared necessary for him only to read; and

so completely altered was his behaviour, that he became highly loved and respected. He wrote some poetry in a correspondence with a young friend—much of it relating to his former behaviour. A comparison of the casts shows that, in the animal region of the brain, little or no alteration had taken place; whereas, in the coronal and intellectual regions the increase, measured from the ear, is from a half to three quarters of an inch.

3. The next case is that of Mr. George Bidder, who, in early life, was the celebrated Devonshire calculating boy, and is now the engineer to the Blackwall railway, and other great public works. Casts of his head were taken at the ages of 8, 13, 16, 19, 22½, and 28. In the first, the forehead is nearly upright, but in the second, and still more in the third, its upper part has receded; the knowing organs, however, have expanded in width. Now, during the interval from eight to sixteen years of age, no education was given him;—his father taking him about, exhibiting his wonderful calculating power, and in general putting up at public-houses, where little culture of the reflective faculties was to be obtained. At length he arrived in Edinburgh, was patronised and placed at school, and from that time mixed in good society for about three and a half years, when he removed to London, and the fourth cast, showing a growth of the upper part of the forehead, was taken by Mr. Deville. After this, he was frequently thrown into high moral and intellectual society, with and by whom he was employed; and at the end of two and a half years so spent, the fifth cast was taken, from which we find that a general expansion had been going on. For about eight and a half years more, he continued in and near London, employed in similar society; and now there is manifest in the coronal region an increase of nearly half an inch, as measured from the ear; while the region of the knowing and reflective faculties also has increased nearly half an inch.

4. Mr. Dennison brought his son to Mr. Deville to get a phrenological opinion of him, and begged that it might be expressed freely, without fear of giving offence. The youth was nineteen years old, and a student of Trinity College, Cambridge. The inference from his head (a cast of which Mr. D. took at the time) was, that he possessed the basis of a useful mind, but was too positive and self-willed to go by the rules laid down for the acquirement of knowledge; would not methodise details, and consequently would have less knowledge at nineteen than he ought to have possessed at twelve or fourteen. This accorded minutely with the account which had previously been given to his father by his Cambridge tutor; and the youth was led to apply so energetically to his studies, that within the next twelve months he gained a wranglership. A second cast, taken two years and a half

after the first, shows a diminution of fully half an inch at Self-esteem and Firmness, and a large increase of all the intellectual and moral organs. Mr. Dennison was so struck with Mr. Deville's observations at the time of the consultation, that he gave him liberty to make whatever use he pleased of his name and of the circumstances of the case; as he considered that phrenology must be of great use in the training of the young. He sent to London casts of several of his family, and also of a relation, for the purpose of obtaining advice as to their education and moral direction. The young gentleman, when transmitting the second cast to Mr. Deville, wrote him a kind letter, stating that he had profited much by his advice, and requesting more. He is now studying for the bar. On the first occasion, his temperament appeared to be lymphatic principally, with a little of the sanguine and nervous; now, Mr. Deville considers it to be bilious 55, nervous 30, sanguine 15.

4. A gentleman had his cast taken, purposely during Mr. Deville's absence from London, and left it for examination, with the announcement that he moved in the higher circles, and was well educated. Combativeness, Destructiveness, and the basilar region generally, were large; Self-esteem, Love of Approbation, and Firmness, very large. The whole of the posterior region was full; and the coronal region, though in some parts full and in other large, was, in Mr. Deville's opinion, not sufficiently balanced to regulate duly the lower feelings. Alternation of good with inferior conduct was hence deduced, and the inference proved to be correct. It was inferred that he would be too positive and self-willed to move smoothly in the walk of life which his circumstances and education entitled him to frequent, as nobody in good society would submit to his dogmatism and unqualified expression of opinion; that, owing to the activity of the posterior region of the brain, he would like society where he could command personal attention, and be the leader of the company, and would be addicted to female society of a similar character; that he would find it difficult to deliver an oration to persons of his own class, for although he would not be at a loss for words or ideas, he could not readily connect and arrange them; and that his brain must undergo a considerable alteration before he could do this, or be able to move in good society with comfort to himself. The gentleman acknowledged that the whole of these inferences were but too true; adding, that his health had suffered in consequence, and he was going abroad for a few years to break off his low connections, and improve his mind and manners. After spending four years in Germany, during which he entered into highly moral society, and successfully studied works on moral philosophy, he no longer felt a difficulty in addressing his own class, and repudiated that with which he had

formerly associated. He is no longer the positive, self-willed being, but anxious to hear, and to give reasons for his opinions; feeling no wish to be considered—nay, loathing the idea of being considered—the leader of such society, male or female, as he formerly delighted in. A second cast, taken after his return to London, shows an alteration corresponding with the change of his character. At Self-esteem, Firmness, and the basilar region, there is a diminution, in some parts, of fully half an inch; while the intellectual region is found to have increased.

5. Casts of the head of a medical gentleman were taken at the ages of twenty-nine and thirty-five. Shortly before the former period, he had attemped to settle in a large provincial town, where he soon became a political partisan, and, being a fluent writer, wrote so strongly against his opponents, that an action was brought against him for libel, and abandoned only on condition of his leaving the neighbourhood. He then came to London, stated to Mr. Deville the difficulties he was in, and solicited some advice. On his head being examined, Self-esteem, Firmness, Love of Approbation, and Combativeness, were found all large or very large; Cautiousness moderate, and the reflecting faculties and Ideality only full; with indications of a command of words and the power of arranging them. That the inordinate strength of the four faculties first enumerated might be lessened and counteracted, he was advised to remove from the metropolis, and reside for a year or two with some respectable family, studying philosophy and ethics, cultivating his reflective faculties, and getting his Self-esteem and Firmness diminished before he again attempted practice. He did so; and has now a very fine practice in one of our largest county towns, where he is highly respected by his neighbours. In the second cast, Self-esteem and Firmness have subsided nearly half an inch, while, at the reflective organs, the head is nearly half an inch larger; the intellectual region generally has increased; and there is an enlargement also of Ideality and the whole coronal region.

6. In 1815, Dr. Spurzheim took a cast of the head of the late Mr. Oldham, formerly mechanist to the Bank of Ireland, and latterly, until his death, to the Bank of England. Mr. Oldham was, in 1815, about forty-five years of age. On comparing the cast with another taken after death, in 1840, an increase is seen in the whole of the intellectual region, agreeing with the increase of talent manifested by him in many ways during the interval, as is well known to engineers and scientific men.

Finally, in five cases where two casts of each have been taken at different ages (viz. twenty-six and thirty, twenty-six and thirty-two, thirty-six and forty, thirty-six and forty-five, and forty-five and fifty),

and where the individuals have engaged in no new studies, nor been subjected to the influence of altered circumstances, no change of form or size is observable. In one instance, where casts of the head of a young gentleman were taken at twelve and fourteen years of age, it was found to have increased a little in size, but to be unaltered in shape. His mother reported, that during the two intervening years he had gone on as before, making progress in no one attainment more than another, and preserving his dispositions and morals as they had been for several years before.

ARTICLE III.

VIMONT ON COMPARATIVE PHRENOLOGY.

Dr. Elliotson, of London, in the new edition of his large work on Human Physiology, gives the following interesting account of the labours of Vimont, who is now one of the most distinguished naturalists in France:—"Dr. Vimont, of Caen, has carried his researches into the phrenology of brutes with extraordinary perseverance, and produced a most magnificent work. Attracted in 1818 by the prize offered by the French Institute to the author of the best memoir upon the anatomy of the brain in the four classes of the vertebrated animals, he began his researches into the subject without any reference to phrenology, for he had not read Gall, and had seen him spoken of in books, and heard of him only as a charlatan; however, he thought it incumbent upon him to read Gall's work among others. 'Hardly,' says he, 'had I begun to read it, when I found I had to do with one of those extraordinary men whom dark envy endeavous to exclude from the rank to which their genius calls them, against whom it employs the weapons of the coward and the hypocrite. High cerebral capacity, profound penetration, good sense, varied information, were the qualities which struck me as distinguishing Gall. The indifference which I first felt for his writings, therefore, soon gave way to the most profound veneration.'

"In 1827, Dr. Vimont presented to the Royal Institute a memoir, containing a fragment of the researches on which he had then spent so many years, together with 2500 heads of brutes of various classes, order, genera, and species. Among them, 1500 belonged to brutes with whose habits he had been individually well acquainted before they died, or were killed; 400 wax representations of the brain, modeled after nature, and an atlas of more than 300 figures of the brain and cranium, executed with the strictest accuracy of dimensions,

also accompanied the memoir. The work in which he now sets forth his observations, has an atlas of 120 exquisite plates, containing about 600 figures. The accuracy of dimensions is said to surpass any thing before attempted in anatomy; and if the immense mass of proofs of phrenology from the human head, and the facts pointed out by Gall in brutes, were not sufficient to convince the most prejudiced, the additional multitude amassed by Dr. Vimont will overwhelm them. No one can pretend to a perfect knowledge of comparative anatomy and physiology, without a knowledge of his labours; and to impress their importance upon my readers, I shall quote a long passage.

"'In animals of the lower class, to begin with fish and reptiles, the number of cerebral faculties is small; their acts generally of short duration—all have a spinal cord. In the apparatus of the senses, they have, externally, a multitude of shades of form and structure, calculated to facilitate their actions. The most prominent cerebral faculties are conservation, alimentation, and reproduction. If there are any perceptive faculties, they are, except in some species, very limited.

"'What a difference, in this respect, between them and birds! How must we be struck with admiration on observing, that with the more energetic and complicated actions of birds, the cerebral system becomes more ample! Is it not still more surprising to see the combination and energy of the faculties perfectly coincide with the wants of the species? How can we, on the other hand, refuse to be convinced of phrenology, when it proves to us, by the inspection of many thousands of skulls, that if birds, whatever be their class, order, genus, or species, or even their peculiar habits, have a faculty in common—for example, that of migration or recognising places—their skulls will always resemble one another at one point; and, as this truth applies to all the faculties discovered by observation, to deny the existence of these facts, is to deny that the eye is the external apparatus of sight, the ear of hearing, the nose of smelling, &c.

"'In quadrupeds and quadrumana, in which the cerebral operations, generally considered, are more numerous and present a more continued action than in birds, we find the cerebral system more developed. Some organs which were but rudimentary in the two first classes, are very prominent; and the acts dependent upon them, being more energetic, confirm the general law of nature—the relation between the extent and force of the acts of the nervous system with its volume or developement. . . . . Full and perfect reliance may be placed on my observations; for they are the result of a scrupulous and conscientious examination of many thousand skulls of brutes, and the dissections of their brains, subsequent to the study of their most striking manners and habits.'"

ARTICLE IV.

ON THE FACULTY OF LANGUAGE AND ITS CEREBRAL ORGANS.

BY J. R. BUCHANAN, M. D.

There is probably nothing in cranioscopy which is more frequently misconceived by amateurs than the effect of cerebral developement upon the position of the eye. The frequency of erroneous suggestions upon this subject is such, that a few explanatory remarks cannot but be beneficial. The salient eye is generally considered indicative of a fine memory of words, and capacity for the acquisition of languages. So far is this from being true, the very reverse of this proposition might be maintained with *equal* propriety.

The eye, resting in its socket, is in contact with the ethmoid, sphenoid, frontal, and malar bones. Its position, therefore, depends upon these four bony walls, with which, but for a small quantity of muscular and adipose matter, it would be in *immediate* contact. The six muscles of the eye, having no other duty than that of turning the ball in a well lubricated socket, are too delicate to have any sensible influence on its position by their magnitude. The filling up of the socket with adipose matter, which occurs to some extent in cases of obesity, when the face is fleshy, changes materially the prominence of the eye, as we see in plethoric persons whose tissues are distended with blood and lymph. When the system is wasted by disease, and the face partakes of the general emaciation, we witness a slight recession of the eye within the socket, owing to the absorption of the substance in which the eye is usually cushioned. In cases of diseased action and fungous growth at the basis of the brain, the eye is sometimes protruded from the socket, while the functions of the neighbouring organs are deranged. But all these causes are of little importance, compared with the arrangement of the bones which constitute the socket, and by which the position of the eye is generally determined.

In proportion as these bones are influenced by cerebral developement, and moved at their points of contact with the eye, the position of the latter becomes indicative of the developement of the brain. To what extent, and in what manner, this occurs, we propose to inquire.

Of the four bones of the socket, it is through the frontal and sphenoid alone that the eye is brought into apposition with the brain. Through the frontal, with the base of the front lobe, and through the sphenoid, with the anterior extremity of the middle lobe. The middle lobe lying at the back of the socket, its developement must necessarily move the eye directly forward, tending to push it horizontally out of

the socket, so as to overhang the face and project beyond the brow. The upper part of the socket (more than one third of the whole) is formed by the frontal bone. This portion (the super-orbitar plate) of the frontal bone supports the convolutions at the base of the front lobe, which constitute the perceptive organs and the organ of Language. Being very thin, its form shows with correctness the developement of those organs. The organs, then, which may affect the position of the eye, are Individuality, Form, Size, Weight, Colour, Order, Number, Language, Tune, Alimentiveness, and Gustativeness. I say Alimentiveness *and* Gustativeness, because the faculties of alimentation and gustation are distinct, and must be manifested by distinct organs. The organ of Gustativeness lies in the anterior and internal portion of the middle lobe, near the fissure of Sylvius, and that of Alimentiveness, in its basilar portion, touching the temporal bone.*

The position of the eye, as we have seen, is affected by the deve lopement of ten or eleven different organs, instead of the single organ of Language; and of these, the only one which tends directly to project the eye, is the compound organ called Alimentiveness. The developement of the organ of Language being in an oblique line downwards and forwards, it tends, when very large, to project and also to depress the eye; but the convolution constituting this organ is entirely too small to have the amount of effect which is usually ascribed to it, and a very slight additional developement of the middle lobe, projecting the sphenoid bone, would have more effect in producing the salient eye than the largest developement of the organ of Language. If, then, we consider the salient eye as an indication of developement, it is rather the developement of the middle than of the front lobe, and

* We often have cases in which the alimentary function is morbid, suspended, or increased, without any affection of the gustatory power. In the following case, the organ of Gustativeness was injured by a tumour. The case is given in the London Medical and Physical Journal, for December, 1827, by T. W. Chevalier. A robust female, aged thirty-nine, having been severely burned at the age of fourteen, "ever since complained of an unusual sensation, which she described as a shaking movement in her inside." "In May, 1827, she was afflicted with a strange sort of headache, and a sensation of burning in her stomach." Her sight became impaired, occasionally her memory failed, and she was liable to falling forward. She spoke of heat in her mouth, and of *a loss of taste*, which she attributed to that cause. She soon became comatose, and died. The brain had a firm, healthy appearance, but a tumour, of the size of a large walnut, was attached to the sella tursica and pia mater. Its base filled the *sella tursica*, and its form was nearly spherical, so situated as "to separate the corpora albicantia and the optic nerves more than an inch and a quarter from the posterior clinoid processes." The situation of the tumour thus was such as to interfere greatly with the anterior internal portion of the middle lobe, and we observe the *loss of taste* was the effect.

therefore has more to do with epicurism, or with destructive violence, than with the faculty of Language.

Without referring to the living, I may mention Darteneuf, the famous epicure, whose portrait we may see among others of the Kit-Cat Club. His epicurism was even alluded to in the polished verse of Pope. The head of Darteneuf does not show the breadth over the cheek bone, for which we are accustomed to look in seeking Alimentiveness. The head appears to have a narrow base, but presents the salient epicurean eye. A more convenient illustration may be found by referring to Spurzheim's Physiognomy for the head of the sensualist Godoi. In that, we see the same salient epicurean eye.

If we are to infer the developement of Language from the position of the eye, it must be from the depression rather than the prominence. The heads of Count Loupede, Charles Bonnet, Count de Buffon, distinguished naturalists, and those of Milton, Locke, Cervantes, George Buchanan, Descartes, Montaigne, Voltaire, John Knox, &c. exhibit this position. At the same time we must remark, that if the perceptive organs are largely developed, the brow and the anterior part of the vault, or super-orbitar plate, will be so much depressed as to diminish the apparent defect of any depression made by the organ of Language; whereas, if the perceptive organs are of a moderate size, the brow being comparatively elevated, the eye appears more depressed. The apparent depression of the eye, then, shows the comparative developement of the posterior, or of the anterior parts of the socket—of Language, or of the oculo-perceptive organs, and of the superciliary ridge.

As to the prominence of the eye, I have already shown that it depends chiefly upon the developement, at the back of the sockets, in the region of Alimentiveness. But prominence must be estimated comparatively; and when we speak of the prominence of the eye, we mean in comparison with the nose, cheeks, and forehead—especially the latter. No matter how much the eye may be projected by the middle lobe, we would not call it prominent if it was still greatly overhung by the front lobe. The brow is the part to which we refer by comparison, when we speak of the eye. Now, as the developement of the intellectual organs projects the whole forehead and brow, it is impossible that there could be a prominent eye in this sense, when the intellectual organs are very largely developed, as in the head of Mr. Webster; whereas, if we cut off from the extremity of the front lobe half an inch of the length of the intellectual organs, we leave the eye uncommonly prominent, as we often find it in the heads of congenital idiots. I have a specimen of this in the skull of a stupid negro woman, who had a remarkably small front lobe. Her low fore-

head was absolutely farther back at its most prominent portion than the cornea of the eye. The socket projected much beyond the intellectual organs. This form is incompatible with intellect, unless it results from the excessive developement of the middle lobe.

It appears, then, that the prominence of the eye is chiefly indicative of the comparative projections of the front and middle lobes. If the front lobe is large or long, and the middle lobe small or receding, the eye is deep sunken. If the middle lobe is extremely prominent, and the front lobe deficient, making a coarse or idiotic character, the eye is very prominent. The prominent eye, then, is frequently to be considered an indication of intellectual deficiency; for it is manifest, *cæteris paribus*, that the more we take from the front lobe, the more prominent the eye becomes.

In estimating the developement of the intellectual organs by the prominence of the front lobe, a comparison of its prominence with that of the eye, though not a precise criterion, will often be of material assistance. There are many high broad foreheads which belong to persons defective in intellect; and if the extremity of the front lobe be cut off, the forehead remaining may be even higher and broader than what appeared before. The fine expansive perpendicular forehead, beneath which we find the salient eye, may be the very mark of stupidity, because it may show a deficient length of the front lobe. This fact has been observed by many, and physiognomists have published it as one of their most certain truths.

Aristotle, and afterwards Rhoses, declared the prominent eye to be indicative of stupidity, like that of the ass. J. B. Porta, in presenting the same idea, near three centuries ago, gives as the explanation the opinion of the physicians, that the salient eye was caused by the moisture or debility of the ventricles of the brain! which must be enfeebling to the mind, as they made the ventricles its organs. Polemon also mentions the prominence of the eye as one of the most unequivocal signs of stupidity, and sometimes of entire imbecility. Moreau endorses these opinions, and Lavater agrees with them

To show the prevalence of these ideas, I would refer to other writers of less distinction. An old French book, bearing the title of Physiognomy and Chiromancy, says, "Too large a forehead indicates a character at once lazy, timid, and stupid." Another, published at Lyons, in 1549, under the title of Natural Physiognomy, says that "those who have the forehead very large and broad, are dull of spirit and understanding." Peuschel, a German writer on physiognomy, says that—"A very voluminous front, announces a man difficult of conception, but apt to retain well what he has learned Slow and dull to acquire ideas, it is equally difficult for him to carry

them into execution." Cratalorus, in a Latin essay on physiognomy, says that those of large foreheads are dull or stagnant, and may be compared to oxen, but those of small foreheads are sprightly.

These opinions of physiognomists coincide well with phrenology. In the cases which have been observed by these physiognomists, and in which they seem to agree so well with each other, with nature, and with Gall, the phrenological principles are very evident. The large moral developements of such heads overruling the animal forces, tend to produce a mild and feeble temperament, destitute of the vivacity and force which belong to the animal organs, while the deficiency of intellect produces slowness and dullness of apprehension. But even did not these opinions coincide with the doctrines of craniology, they would be worthy of our serious attention, as they relate to a mere matter of observation, and in all matters of simple observation, the unanimous testimony of observers is proof sufficient.

If the vertical forehead and prominent eye may, then, be often the indication of stupidity, they cannot be the indication of a talent for the languages, but must be rather the reverse, for the study of languages is not merely an exercise of the organ of Language, but is an exercise, in truth, of all the intellectual organs. The argument has sometimes been used as an objection to the study of the ancient languages, that it is the cultivation of only one intellectual organ to the neglect of all the rest—an unjust argument in behalf of a good cause. The study cultivates not only attention, but every phrenological species of perception, reflection, and recollection. Much as the study may be abused, and much harm as it has unquestionably done, we cannot deny the truth of the argument in it behalf, drawn from the excellent mental discipline that it affords when rightly pursued.

What is the study of language? The study of written language is the recognition of certain printed forms or marks called letters, and the association of these with the corresponding sounds, and the ideas which those sounds represent. It is also the study of their relations to each other, and the appropriate mode of connection. The science of the relations of words affords an exercise for the highest order of talent and profound reflection. To understand the construction, appreciate the beauty, and catch the spirit of language, requires a vigorous exercise of intellect—especially of Comparison, Causality, and the reflective organ *called* Wit. Printed letters are perceived and recollected by Colour, Form, Size, and Individuality. In recollecting or perceiving words, we also use Locality, Number, and Order, to understand the combinations of letters; while to understand their sound or utterance, we use Tune and Time. All visible objects are conceived and recollected by Form, Size, Colour, and Individuality;

Ocular Memory

those who have these faculties in an eminent degree, can easily look at a line of writing or a book, and then, closing the eye, bring before the mind a vivid conception of the letters as seen upon the page. They are thus enabled to read them easily, forwards or backwards, as if they were looking on the book. It was in this manner that Buxton performed his astonishing mental calculations. He had the whole series of figures in the mind's eye, as if they had been written down upon a slate. Verbal memory, then, is greatly dependent upon these organs; for verbal memory, in the case of a printed or written language, is chiefly dependent upon the ocular memory. (To those who remark that they can recollect faces very well, but not names, which is the case with nine tenths in the United States, I reply that they could recollect them very well by writing them down, or by seeing them on a sign, for they are then recollected like the faces, by the ocular memory.)

In addition to the ocular, we need the auricular memory—the memory of the sound of the word. This depends either upon the organ called Tune, or upon that called Language. That it depends upon the former, is the doctrine which I have taught for the last four years. Let us, however, speak of them together; for if we do not allow to the organ of Language the memory of vowel sounds, it at least claims that of the articulations—the memory of the consonants.

The study of language, then, being an exercise of all the intellectual organs, we should not confine our observations to the organ of Language, when we would determine the capacity for such studies. On the contrary, it is more important that the forehead should be prominent than the eye. Still, we must not overlook the importance of the organ of Language. The oculo-perceptive organs may recollect the forms or appearances of the letters—the faculty of sound may recollect the spoken language, and the various intellectual faculties may associate the written and spoken language with the proper conceptions, but we need something more. These conceptions and forms must be associated with the vocal effort necessary for the utterance of the proper sound. This power of utterance must appertain to the organ of Language, and it seems probable that it is the sole function of that organ.

When we take away from the general faculty of Language, 1st, the portion contributed by the whole intellect—2d, by the oculo-perceptive organs—and 3d, by the organ of sound, we find nothing remaining for the function of that organ but the mechanical part of language—the utterance of the sound. The organ that manages the muscles of articulation is thus the next neighbour of that which manages the

hands in all dexterous operations—in other words, the convolution of Language runs into that of Constructiveness.

If the articulation be the sole function of the organ of Language, we may account for the fine verbal memory which is sometimes found in persons who have but a moderate developement of that organ. But we would expect to see a large developement of it in a speaker of remarkable fluency, as otherwise his utterance, incapable of keeping pace with his ideas, would be a source of much embarrassment, and he would prefer writing to speaking, when he would display his powers to the best advantage. Those who have a large developement of the organ of Language, become more fluent by excitement or irritation, and pour forth a torrent of words; while those who have it small, are liable, in moments of excitement, to become suddenly embarrassed in speech.

The highest degree of the faculty of Language is found in those who have the broad, prominent forehead, with the depressed eye, and a fulness of the spheno-coronal suture, near an inch behind the external angle of the brow. The latter indication, though mentioned by Gall, has been much neglected by later phrenologists; yet it is, according to my observations, the most important indication of the organ of Language.

If, having a forehead thus happily constituted for lingual purposes, we leave the special organ of Language untouched in large developement, and shorten the front lobe by taking off a section in front, we will at once interfere materially with the faculty of Language. Whenever the lower part of the front lobe has been sufficiently curtailed, Language will be affected. I have sometimes found in schools that the worst readers—those who read with the greatest slowness or difficulty, and who required the longest time to acquire the art—were well developed in the organ of Language, and had the salient eye with the short front lobe. The deficiency of the perceptive organs in such cases, makes it very difficult for them to acquire a printed language. They are slow in becoming familiar with the forms of the letters, and never acquire so perfect or ready a familiarity. In glancing at the page, they recognise but a small number of the letters at once, and a vigorous attention is necessary for them to conceive and combine a sufficient number of letters to form a word. Their reading, therefore, is a laborious discovery of word after word; whereas, the boy possessing a large developement of the lower half of the forehead, looking carelessly at the page, perceives by a glance all the letters or words of the line, and utters them easily with the rapidity which best suits his taste or powers of utterance.

The foregoing remarks are of especial importance to young prac-

tical phrenologists, whom I have sometimes observed greatly embarrassed by finding the salient eye in men defective in the faculty of Language. The common impression that phrenology ascribes great intellect to a high broad forehead, has been the cause of much doubt as to the truth of the science; for there are so many stupid men who have such foreheads, that most of those who have a vague idea of the science have seen some such case. If the lower, which may indeed be considered the more important portion of the forehead, be highly developed, it would require an immense developement of the organs of the abstract intellect to produce a high vertical forehead; hence the receding forehead is of the most symmetrical and most common form. The vertical forehead shows a disproportion between the abstract and the practical intellect, and frequently accompanies a deficiency of the latter.

(To be continued.)

ARTICLE V.

PHRENOLOGY AND CHRISTIANITY.*

Galileo was told from high authority in the church, that his doctrine of the revolution of the globe was obviously at variance with Scripture, and therefore that it *could not be true;* but as his opinions were founded on physical facts, which could neither be concealed nor denied, they necessarily prevailed. If there had been a real opposition between Scripture and nature, the only result would have been a demonstration, that Scripture in this particular instance was erroneously interpreted, because the evidence of physical nature is imperishable and insuperable, and cannot give way to any authority whatever. The same consequence will evidently happen in regard to phrenology. If it were possible that any facts in physiology did actually and directly contradict any interpretation of Scripture, it is not difficult to perceive which must yield. The human understanding cannot resist evidence founded on nature; and even if it did resist, nature would not bend, but continue to operate in her own way in spite of the resistance, and a new and more correct interpretation of Scripture would ultimately become inevitable. This opposition we sincerely believe to be in itself impossible, when the facts in nature are correctly observed, and divine truth is correctly interpreted; but

* From the 30th number of the Edinburgh Phrenological Journal.

we put the case thus strongly to call the serious attention of religious persons to the mischievous consequences to religion, of rashly denouncing any doctrine professing to be founded on natural facts, as adverse to revelation. Every instance in which the charge is made falsely, is a mortal stab to revelation itself, and tends to lead men to regard Scripture as an obstacle to the progress of science and civilisation, instead of being a system of divine wisdom, in harmony with all natural truth.

Some persons are anxious that we should avoid all discussion of the relations between phrenology and religion, as tending to create uneasiness, and being unnecessary to the progress of the science; and if we could view the matter in this light, we should be happy to act as they advise; but as it appears to us certain, that phrenology is destined to exercise an important influence on the religious opinions of mankind, it is a duty to state this fact. If the diffusion of the principles of this science will strengthen, purify, and advance religion, which we firmly believe, the sooner the relationship between the two is made known the better. If it were possible that phrenology should weaken religious truth, or impede its progress, it would be dishonest, whilst suspecting this result, to propagate its doctrines, and conceal their tendency. In either view, therefore, it is the duty of a candid and benevolent mind to speak openly. In all earnestness and sincerity, therefore, we announce to religious professors of every denomination, that the day is on the wing, when they shall find their doctrines sifted and tried by the principles of this science. We are convinced that true religion will gain great strength and power by the ordeal; but we are prepared to expect modifications of many existing opinions.

One of the most important and fundamental questions in morals and religion, is the inherent capability of the human mind, by the developement and proper application of its own elements, and those of external nature, to rise in the scale of improvement; we do not say to perfection, but to a condition fairly calculated to satisfy the reasonable demands of our moral and intellectual faculties. If we assume the negative side of this question to be the true state of the fact, we shall be led by our principles to treat lightly the natural qualities of the human mind, and to look for success in improving mankind chiefly from spiritual influences. Some sects in religion have not only denied the capability of human nature to improve itself, but represented its constitution, and that of the external world, as positively adverse to such improvement; so much so, that they consider the chief value of revelation to consist in proving this to be man's true natural condition, and in providing a spiritual remedy for his inherent defects. Accordingly, the general train of clerical instruction proceeds

on this principle. Theology is essentially scholastic and dogmatic, and not practical in its character. From the pulpit and the clerical press we receive no scientific expositions of the elementary qualities of human and physical nature, and of the effects of developing these, under the guidance of intelligence, and moral and religious principle. We are not encouraged to found our practical conduct on the basis of nature, and to look for enjoyment as the legitimate result of following out her institutions. The general system of religious teaching is adverse to such principles. Nature stands condemned; it is regarded as debased; it is despised and neglected. If there shall be error in this sentence, it must be one of momentous magnitude, in regard to man's duty, both to his Creator and himself.

If, on the other hand, we assume that man and the external world, such as they now exist, are both direct emanations from the will of the Creator; that the elements of both bear the impress of his wisdom and benevolence; and that the constitution of man, as a rational being, necessarily implies that it is his duty to dèvelope his own powers, to apply them by his intelligence, and to direct them by his morality, as the means of attaining to enjoyment; then a different style of clerical teaching is imperatively called for. According to this view, the foundation of all improvement must be laid in a knowledge of the elements of human and physical nature; and the advancement of man must be accomplished by the proper application and direction of these elements; which application will become possible exactly in proportion to the discovery of the powers of the elements, and of their relationship. If we have reason farther to believe that the human mind itself is susceptible of great improvement in its moral and intellectual capacities, by physiological causes, cognisable by human intelligence, the obligation imposed on us to study our own nature, and improve it, will be still more deeply felt and readily acknowledged.

It is a shallow objection to the latter views, that they arrogate to man the power of improving his own condition, which properly belongs only to God. The Creator displays equal power and goodness in conferring on a rational being faculties capable of developing themselves, as in applying from day to day spiritual influences to produce this effect. The full grown fruit is as much a gift of the Creator, as the seed from which it sprung; because its capacity to ripen was conferred by him, and he instituted all the agents by means of which it arrives at maturity. So is it in regard to man.

It is obvious that phrenology affords some assistance in determining which of these views of human qualities is most consonant to nature. The advocates of the depravity of man, refer to his violent passions, his limited understanding, his perverse will, and his countless crimes,

as triumphant evidences of his inherent worthlessness and weakness. On the other side, the meekness and benevolence, the love of order, justice, elegance and refinement, the acute observation, the profound reflection, and the splendid monuments of art, science, and social life, which man has exhibited in his past career, are adduced as proofs of his possessing a superior nature. Phrenology shows (and we hold the point to be positively demonstrable) that human beings exhibiting the former qualities, are endowed with organs of animal feeling disproportionately large in relation to their organs of intellect and moral sentiment; that those displaying the latter qualities, possess a developement of brain exactly the reverse in the proportions of its parts; and that, by due attention to the laws of physiology, it is possible to diminish the numbers of the former, and increase those of the latter, to an extent of which the limits are not at present conjectured. Not only so; but there is reason to believe, that even the best qualities of the highest order of minds are still susceptible of great improvement.

If, then, these be physical facts, existing or operating, whether believed in or not, abiding in their nature, and irresistible in their consequences, it is clear that it is unwise to sound an alarm against them, without inquiring into their truth, on the bare assumption that they are adverse to Scripture; especially when we consider that Christians are by no means unanimously agreed in regard to the extent of man's depravity, and that the unfavourable interpretations were put upon Scripture by divines who were utterly ignorant of the momentous truths now adverted to.

Phrenology gives a degree of clearness and precision to our views of the human constitution which was never before enjoyed; and it forces us, by the palpable nature of the facts which it presents to our consideration, to reason on ethical questions whether we will or not.

Again, all existing interpretations of Scripture have been adopted in ignorance of the fact, that, *cæteris paribus*, a brain preponderating greatly in the size of the animal organs over the moral and intellectual organs, has a native and instinctive tendency to immoral conduct, and *vice versa*; and that the influence of the organisation is fundamental; that is to say, that no means are yet known in nature, by which a brain of the inferior combination may be made to manifest the moral and intellectual faculties with equal success as a brain of the superior combination. Only phrenologists, who have observed, for many years, in various situations, and under different influences, the practical conduct of individuals constituted in these different ways, can conceive the importance of the combinations of the organs; but after it is discovered, the inferences from it are irresistible. The religious teachers of mankind are yet ignorant of the most momentous fact in

regard to the moral and intellectual improvement of the race which nature contains. We have heard it said that Christianity affords a better and a more instantaneous remedy for human depravity, than improvement in the cerebral organisation; because the moment a man is penetrated by the love of God in Christ, his moral affections and intellect become far more elevated, whatever his brain may be, than those of any individual without that love, however high his cerebral developement may be, and however much he may be instructed in natural knowledge If the case were as here represented, there would be a power in operation on the human mind, which acted not in accordance with, but independently of, organisation; and, accord ingly, many excellent persons believe this to be Scriptural truth, and matter of fact also; but so far as our observations extend, we are compelled to dissent from the conclusion. We cannot doubt that the influence of the brain is established by the Creator, because he gave it all its qualities and effects; and as he is perfect wisdom and goodness, we cannot conceive one part of his works contradicting another. Farther, we have observed men in whom the moral and intellectual organs were large, proving themselves by their whole conduct on earth to be excellent Christians, which goes to support phrenology; but we have never seen an individual with large animal, and small moral and intellectual organs, whose conduct was steadily moral, under the ordinary temptations of life, however high his religious professions might be. Indeed, we have seen several striking instances of person, who, after making a great profession of religion, ultimately disgraced its cause; and we have observed, without one exception, that in all these instances the organs of the inferior propensities were large, and those of one or more of the moral sentiments deficient; and we are convinced that the same conclusion, after sufficiently accurate and extensive observation, will force itself upon all candid and reflecting minds.

Our inference, therefore, is, that the Divine Spirit, revealed in Scripture as a power influencing the human mind, invariably acts in harmony with the laws of organisation; and that a well constituted brain is a condition essential to the due manifestation of Christian dispositions. If this be really the fact, and if the constitution of the brain be in any degree regulated by the laws of physiology, it is impossible to doubt that phrenology is destined to exercise a vast influence on practical Christianity.

An admirable portion of Christianity is that in which the supremacy of the moral sentiments is explained and enforced as a practical doctrine, "Love thy neighbour as thyself;" all mankind are thy neighbours. Blessed are the meek and the merciful; love those that hate

you and despitefully use you; seek that which is pure and holy, and of good report;—these are precepts of Scripture. Now, phrenology enables us to demonstrate, that the human faculties, and external nature, are so constituted as to admit of this becoming a practical doctrine on earth, which it has rarely entered into the heart of man to conceive as a possibility without miraculous interference. If phrenology shall carry home to the conviction of rational men, that the order of nature fairly admits of the practical exemplification of these precepts by the developement of its inherent resources, a new direction must necessarily be given to the pursuits of the religious instructors of mankind. In the dark ages which followed the subversion of the Roman Empire, men, through ignorance, converted Christianity into a vast system of superstition; in proportion as learning revived, the barbarous superstructures which had been raised on the simple foundations of the Gospel were cleared away; but the period from the revival of letters to the present day, has been the age of scholastic learning, as contradistinguished from that of philosophy and science. Christianity stands before us at present, as interpreted by men who knew extremely little of the science, either of external nature or of the human mind. They have conceived it to be a system of spiritual influences, of internal operations on the soul, and of repentant preparation for another world, rather than an exposition of pure and lofty principles inherent in human nature itself, capable of being largely developed and rendered practical in this world. It is a common accusation against philosophy, that the study of it renders men infidels; and this alleged fact is brought forward as a proof that human nature is corrupt, blind, and perverse, turning what ought to be its proper food into mortal poison. But if this were really a well founded charge, the conclusion which we would draw from it would be, that there must be essential errors in the popular interpretations of revelation, when the effect of a knowledge of nature on the mind is to lead to disbelief of its truth. Science is of modern growth, and, down to the present hour, the mass of Christians of every country have embraced their faith without the possibility of comparing it with the revelation of the Divine Will contained in the constitution of external nature, which, philosophically speaking, was unknown to them. For example: The brain is capable of being greatly improved by attention to the laws of physiology; and improvement in the brain will be accompanied by enlargement of the moral and intellectual capacities, and diminution of the animal propensities of the mind. These facts have been unknown by divines, who have denied the capability of mankind to attain, by the developement of their natural powers, to a higher moral condition than they have hitherto exhibited, and hence their decision against the capabilities of

human nature has been pronounced *causa non cognita*, and must be open for reconsideration. If Christianity was freed from many errors by the revival and spread of mere scholastic learning in the fifteenth, sixteenth, and seventeenth centuries, much more may we expect that the interpretations of it will be farther purified, corrected, and elucidated, by the flood of light which the sciences of human and physical nature, now in the course of cultivation, will one day shed upon it.

According to our view, the study of the human constitution, and of external nature, and of their relations, will become an object of paramount importance with reference to a just appreciation of the true meaning of Scripture. Civilised man sees infinitely more true and practical wisdom in Scripture than the savage of the wilderness, even supposing that the latter could read and understand the words of the sacred volume; and, in like manner, we humbly think that man, when thoroughly instructed in his own constitution, and in that of external nature, will discover still profounder truth, and more admirable precepts in that record, than ignorant, contentious, blind, and conceited man, such as he has hitherto existed. These observations may perhaps appear presumptuous to those who do not admit phrenology to be a true exposition of the Divine Law in the constitution of man. To such persons we are able to offer no apology. We have done our best to ascertain the truth of what we teach, and that truth appears to us to be too momentous to be hidden. If they, without submitting the question to investigation, as we have done, choose to condemn us on the strength of their own preconceived opinions, we appeal from their sentence to men better imbued with philosophy, and more thoroughly acquainted with practical Christianity, and conclude in the words of Dr. Whately, that "we are bound to use our own natural faculties in the search after all that is within the reach of these faculties, and that most especially ought we to try, by their own proper evidence, questions which form no part of revelation properly so called, but which are incidentally alluded to in the Sacred Writings."

ARTICLE VI.

THE NEGRO AND CAUCASIAN BRAIN COMPARED.

Professor Tiedeman says that the average weight of European brains is from 3 lbs. 2 oz. to 4 lbs. 6 oz., troy; but the average of four Negro brains, from which he drew his conclusions, will be found

to be only 3 lbs. 5 oz. 1 dr., or 3 oz. above the *lowest* European average; and the *highest* Negro brain falls 5 oz. short of the highest *average* European, and no less than 10 oz. short of Cuvier's brain, which weighed 4 lbs. 11 oz. 4 dr. 30 grs.; Dupuytren's 4 lbs. 11 oz. If we take the average of the length of the brains of the four Negroes, it will be found to be 5 inches 11 lines; but that of seven European males, which he examined for comparison, 6 inches 2½ lines. The average greatest breadth, 4 inches 8⅓ lines in the former, 5 inches 1½ lines in the latter. The average height is 2 inches 11⅓ lines in three of the four Negroes; 3 inches 4 lines in the Europeans. He adds that "the anterior portion of the hemispheres is somewhat narrower than is usually the case of Europeans."

The average capacity of forty-one Negro skulls, in his tables will be found to be 37 oz. 1 dr. 20 grs., or, if those which were female are subtracted, 37 oz. 6 dr. 18 grs.; that of seventy-seven European skulls of every nation, in his own tables, 41 oz. 2 dr. 30 grs. Dr. Morton, however, after examination of twenty-nine skulls of unmixed Negroes, nine of them native Africans, states the mean internal capacity of Caucasian skulls to be 87 cubic inches; and of the Negro to be only 78. The most capacious European skull was 109; the least, 75. The most capacious Negro skull, 98; the least, 65. In face of his own results, Dr. Tiedeman declares that the opinion of Camper, Soemmerring, Lawrence, Virey, Cuvier, &c.—that the Negro has a smaller skull and brain than the European—is "*ill founded and entirely refuted by my researches!*" He declares that the weight and the size of the Negro brain is as great as those of Europeans!" "Here, then, on Tiedeman's own showing," says Dr. Andrew Combe, "we have, first, an inferiority in the dimensions of the Negro brain, and a greater narrowness of its anterior lobe; and secondly, a marked inferiority in the capacity of the Negro skull to the extent of about one tenth; and yet he very strangely infers that *both are equal*, to the European; and the Royal Society, and half our scientific men and journals, adopt and propagate both facts and inferences as literally correct and of vast importance! If the phrenologists had perpetrated such a series of blunders, Sir William Hamilton and his allies would have shouted in triumph over their stupidity."—*Elliotson's Physiology.*

Just N.B.

ARTICLE VII.

CASE OF INSANITY.

(The following case of insanity was communicated to us by Dr. H. A. Buttolph, in a letter dated Sharon, Ct., March 6th, 1841; its bearings on phrenology will be obvious to the reader.—Ed.)

Mrs. P——, of ——, Ct., aged eighty-four, of nervous bilious temperament, had been deranged about eleven years at the time of her decease, which occurred early in February last. Prior to the date of her derangement, she had suffered much from functional disease of the stomach. She naturally possessed decided practical business talents as a landlady, and was fond of the pecuniary avails of her efforts. She was affectionate in her family, kind and hospitable to strangers; uniformly consistent in her moral and religious character, and although reserved in her manners, yet generally cheerful. The first indications of derangement which her daughters (with whom she lived) observed, was a fear that she was losing her property, and that they (her daughters) were secretly appropriating it to their own use.

This suspicion was at first cautiously expressed, but she grew more and more bold in her accusations that they were taking her property unjustly, until at length she became entirely alienated in her feelings towards them—would say she meant to kill them, and would frequently, by open and by secret means, attempt to injure them. For a length of time, however, she would converse rationally with her neighbours when they called in to see her, and would manifest her usual degree of interest in their welfare. During the latter part of her derangement, she became exceedingly violent in her temper, making unceasing efforts to injure and destroy every thing in her way. Her language was rarely profane, though often extremely vulgar. Near the close of her life, the powers of her mind were greatly enfeebled, and finally she died in a state of almost complete fatuity.

Her brain was about the medium size, with no greatly disproportionate developement in any particular part, except that of Cautiousness, which was decidedly large in proportion to either the coronal or the superior frontal regions. The posterior and lateral regions, embracing the phrenological organs of Philoprogenitiveness, Adhesiveness, Combativeness, Destructiveness, and Acquisitiveness, were full; and a preponderance somewhat of the perceptive over the reflective organs in the anterior region.

Anatomical Appearances.—On piercing the dura mater, there was an escape of a watery fluid to the amount of from three to four ounces;

the vessels of the pia mater were highly and universally engorged with blood. The general consistence of the brain was much increased. Effusion of from two to four drams was found in the lateral ventricles; and softening, with change of colour to a greenish yellow, of the posterior portion of the middle lobe of the left hemisphere. The softened portion embraced the organs of Philoprogenitiveness, Adhesiveness, Combativeness, and a part of Destructiveness.

It may also be remarked, that the internal carotid arteries were pretty firmly ossified for three fourths of an inch after leaving the carotid canal, through which they pass to the brain.

MISCELLANY.

Progress of Phrenology.—Dr. Elliotson, late Professor of Medicine in the London University, has recently published the fifth edition of his large work on Human Physiology, in which he has boldly and most ably vindicated the truth of phrenology. He has devoted nearly a hundred pages to a consideration of the functions of the brain, and made very numerous references to, as well as quotations from, phrenological writers. Dr. Elliotson is one of the most distinguished physicians in Great Britain, and has always been indefatigable in his labours for the promotion of science generally, as well as for the elevation of medicine in particular. He was one of the first to embrace phrenology, and has contributed many excellent articles to various periodicals in exposition and defence of its principles. In his work on physiology (p. 402), we find the following note:—Says Dr. Elliotson, "When I wrote, advocating phrenology, in 1817, the year of my appointment to St. Thomas's Hospital, I did not know six phrenologists in England; and when I founded the Phrenological Society of London, there was none in England or abroad. They now exist in many parts of Scotland, Ireland, America, Denmark, and Paris. In Paris, the most distinguished members of our profession are phrenologists. To the everlasting honour of Edinburgh, not only was the first phrenological society established there, but the first phrenological journal; and a treatise on the science by Mr. Combe has passed through several editions, and made its hundreds of converts. Thousands of well-informed persons in this country are now phrenologists—a very large number in my own profession. Though the pope put Gall's works into the Index Expurgatorius, phrenological treatises have lately been permitted in the states of his holiness, as well as by Austria, in Milan and Pavia. Phrenological language is of daily use with our best writers and teachers; though they, too, often fear to declare their conviction. I have never known an individual write or speak against phrenology, without betraying a total misconception of it, or an ignorance of the facts of which he spoke."

Political Ethics.—We learn that E. P. Hurlbut, Esq., has just closed an interesting course of lectures on Political Ethics, at the Mechanics'

Institute, New York. The New York Courier and Inquirer, for February 16th, gives the following synopsis of Mr. Hurlbut's lectures; which, it will be seen, involve topics of inquiry of the greatest value and importance. We sincerely hope Mr. H. will be induced to present the public, ere long, with a work on the subject:—

"In the *first* lecture he maintained—

That the sentiments, faculties, and passions of the human mind are *innate*—are dependant on man's physical organisation, and are manifested by means of the brain.

That all sane human beings are endowed with *the same mental powers;* that they differ in the *degree*, but not in the kind of their mental manifestaions.

That as all external nature is adapted to the developement, gratification, and exercise of the powers and dispositions of the human mind, it is to be inferred as the natural design, that every power of the mind should be employed, and every native desire of it be gratified.

That the fundamental rights of mankind are, 1st, The right of life; 2d, The right of happiness.

That the *means* of attaining happiness, are to be found in the healthy and harmonious activity, exercise and gratification of the native sentiments, faculties and desires of the human mind.

That human rights can only be understood by means of a *mental philosophy* which should accurately define the innate powers and dispositions of the human mind and their true relation to external nature; and he adopted *phrenological science* as unfolding the true mental philosophy.

That all rights and duties are ordained by natural laws—that the only proper function of human laws, is to *protect and enforce* them—and that whatever is indifferent to the laws of nature, should be left undisturbed by human legislation.

He next endeavoured to show that the *social state* is the natural condition of the human race—that certain powers of the mind can find no appropriate exercise, except in general society, and that man had *a right* to live in that condition.

That this right must not oppose any *other right*, equally incident to his nature—and that, in the social state, man could not properly be required to sacrifice a solitary natural right.

This led to the means to be employed for the protection of rights, and to the consideration of *government*, as an *instrument* adopted by men being in the social condition, for the declaration and defence of the rights of humanity.

The *second* lecture treated of the *origin and nature of government.*

The *third* lecture treated of the *organisation of government*, and of the persons who might participate in its affairs. He excluded four classes only of persons from the exercise of the *elective franchise.*

1st, All persons of immature age. 2d, Intellectual idiots. 3d, Moral idiots. 4th, The grossly ignorant.

The *fourth* lecture was upon *rights not recognised, and rights imperfectly protected* by laws.

The lecture for Monday evening was devoted to the discussion of the *rights of woman.* In this we are informed that he contested almost every principle of the common law in regard to the *matrimonial state*—from the doctrine of marriage being a *civil contract*, to the end of the chapter. He examined the *moral condition* of woman under the *common law*, and treated of the right of divorce and the right of property.

The *sixth and last* lecture will be upon Friday night upon *the right of property*, in which he purposes to show it to be founded in nature: its

relation to man's moral sentiments; the causes of the inequality of men's estates; to inquire into the propriety of laws which affect the acquisition of property; and to discuss corporations, internal improvements, speculations, credit systems, &c."

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Mental Science in England.—The state of mental science in England appears to have been nearly stationary for the last half century, with the exception of what contributions have been made to it by the discoveries and labours of phrenologists. Says the writer of an able article in the American Biblical Repository for January, 1841, while speaking (p. 151) of the present state of literature in England, "whatever the causes may be, the fact is indisputable, that in the department of ethical and mental philosophy there is no living writer of note. There has been no contribution to these sciences of any considerable value since the days of Tucker and Paley; for Sir James Mackintosh was a Scotsman, and Coleridge's Remains are *disjecta membra*. Loud complaints have long been uttered against Dr. Paley's system, yet no one has arisen to supply the deficiency. The most that the professor of moral philosophy at Cambridge (who dislikes Paley) promises, is a reprint of Bishop Butler's Sermons on Human Nature, with excerpts from other authors, and illustrative notes from his own pen."

Laws of Hereditary Descent.—In the Mothers' Magazine for February—a religious periodical, published monthly at New York, and having an extensive circulation—may be found an interesting article on the *Laws of Hereditary Descent*, contributed by a lady. It is truly gratifying to find such sentiments as the following in a *mother's* magazine—"Mr. Combe says, if the same amount of knowledge and care that has been taken to improve the domestic animals, had been bestowed upon the human species during the last century, there would not have been so many moral patients for the lunatic asylums, or the prisons, at present. That the human species are as susceptible of improvement as the domestic animals, who can deny? Then is it not strange that man, possessing so much information on this subject, and acknowledging the laws that govern such matters, should lose sight of these laws in perpetuating his own species? Yet how short-sighted is that individual who, in forming a matrimonial connection, overlooks the important consideration of the quality of the physical and mental constitution which his children will be likely to inherit; and also that a great portion of the happiness, or misery of his future life, will depend upon the conduct of those children; and again, that their manifestations, whether good or evil, will be the effect of the mental, moral, and physical organisation which they inherit. The time is fast approaching when men will have to pay more attention to this subject, for the science is taking deep root by which these matters can be tested, and the parent will not be so much *pitied* as *blamed* for the bad morals of his child."

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Growth of the Brain.—Dr. Elliotson, in his physiology, remarking on the growth of the brain, says, "The truth is, the brain grows for a great many years. If you examine the heads of children seven years and upwards, you will find the average size much below that of the adult head. Every hatter knows that the sons of most of his customers require hats of larger and larger sizes every year till they are men. Nay, the head grows in some instances to a late period—till near or past forty.

Gall told me that Napoleon's hatter assured him that the head of that ruthless destroyer of human life grew to the age of thirty-five. Phrenologists know that different parts of the head grow differently at different ages, and that the forehead in particular parts of it sometimes grows very much in young adults. Casts have now been taken of the same individuals at various ages in many instances, and the changes of the different parts of the skull, and therefore of the cerebral organs, are very great; for the hard parts depend much for their size and form upon the soft, and the skull exactly represents the brain when in a healthy state, and before decline begins. In some instances, it is said that accidental exercise has caused the increase. But generally this has been the result of natural tendency to developement. No amount of exercise will make a giant of a dwarf, make a small eye large, or lengthen a limb or a finger. Exercise will make an organ plump—make it thicker and more vigorous; but it is limited in its power by the limits of nature."

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Criminal Jurisprudence.—The Hon. Joel Parker. Chief Justice of the Court of Common Pleas for New Hampshire, introduced indirectly the subject of phrenology in a charge on insanity, delivered September, 1838. He recognised not only intellectual insanity, but added that "the propensities and sentiments may also become deranged;" and among the diseases to which they are liable, he included "an irresistible propensity to steal," "an inordinate propensity to lying," "a morbid propensity to incendiarism," and "a morbid propensity to destroy." We have here distinctly recognised the morbid states of Acquisitiveness, Secretiveness, and Destructiveness.

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Phrenology in Italy.—Says Mr. Combe in his address at the late meeting of the Phrenological Association, "On my arrival from America in June last, I found awaiting me a little work entitled 'Memoirs regarding the Doctrine of Phrenology, and other sciences connected with it,' by Dr. Luigi Ferraresse, Professor of Medicine in Naples, read before the Royal Academy of Sciences in that city. It was published with full permission from the royal censor of the press. The censor, in his report on the work, certifies that it 'is very instructive and useful, and contains nothing offensive to religion, or to the rights of the king.'"

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The editor of the "Law Journal," of Boston, is an able and zealous phrenologist, and in his work advocates its application to criminal jurisprudence.

The Institution for the Blind in Boston is ably conducted by Dr. Howe, a phrenologist, who has actually printed in raised letters an "Outline" of the science, which he teaches to his pupils.

The prize essay of the Central Society of Education in London was recently presented to a Mr. Lalor, who acknowledges, in explicit terms, the obligations of education to phrenology.

Lady Blessington, in some of her late works, has spoken in favourable terms of phrenology.

"I am happy to say that there is at King's College, as well as at University College, a professor who has for many years been a decided phrenologist, and avows his conviction."—*Dr. Elliotson, London.*